Detailed Project Report
Green Harbor
Marshfield, Massachusetts

Navigation Improvement Study

February 1990

US Army Corps of Engineers
New England Division

DETAILED PROJECT REPORT
GREEN HARBOR
MARSHFIELD, MASSACHUSETTS

NAVIGATION IMPROVEMENT STUDY
FEBRUARY 1990

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASSACHUSETTS 02254-9149

SYLLABUS

This study, which was performed under the Continuing Authority contained in Section 107 of the River and Harbor Act of 1960, as amended, investigates a variety of navigation improvement alternatives for Green Harbor, Marshfield, Massachusetts.

The present marine conditions of Green Harbor do not meet the demands of providing adequate anchorage and pier access for both commercial and recreational vessels. The existing anchorages are full to capacity and pier facilities are overloaded.

Providing additional anchorage and/or channels has been requested by the town as a means of easing the overcrowded conditions. Accordingly, five alternative improvement plans were evaluated. Three of these plans were found to be environmentally unacceptable. One plan was found to be unacceptable to the public. The final plan, providing a new one acre anchorage area, is environmentally and technically feasible and acceptable to the public, but lacks economic justification. Potential annual benefits of this plan are $16,800, while annual costs are $29,000.

Due to the lack of economic justification, this report recommends that further studies to investigate the feasibility of Federal participation in harbor improvements to Green Harbor in Marshfield, Massachusetts be terminated at this time.

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INTRODUCTION

This Detailed Project Report (DPR) is the result of a planning, engineering, economic, and environmental feasibility study of navigation improvements at Green Harbor, Marshfield, Massachusetts. The study was initiated in response to a letter from the Town of Marshfield requesting that the Army Corps of Engineers conduct an investigation of the needs and opportunities in the harbor. The first phase of the study provided for a reconnaissance investigation which determined that Federal involvement in providing commercial navigation improvements in Green Harbor was warranted, and that initiation of a detailed feasibility study was justified. This report presents the findings of that detailed study which examined alternative plans of improvement to navigation in Green Harbor.

STUDY AUTHORITY

This DPR is prepared and submitted under the authority and provisions of Section 107 of the 1960 River and Harbor Act, as amended, which provides authority for the Corps of Engineers to develop and construct small navigation projects.

SCOPE OF STUDY

The geographic scope of this study area is limited to Green Harbor above the entrance channel. Study objectives included the following:

- The determination of the navigational problems and needs of the area.

- The determination of the most probable future condition without Federal improvements.

- The development of alternative plans of improvement, including reevaluation of alternatives considered during reconnaissance studies.

- The evaluation and comparison of the engineering, economic, environmental, social, and cultural impacts of the alternative plans with respect to existing and future conditions.

- The recommendation of improvements in accordance with appropriate legislation and current Army policy that is technically and economically feasible, environmentally and locally acceptable, and socially beneficial.

PRIOR STUDIES AND IMPROVEMENTS

FEDERAL

December 1965 - Section 107 study report provided for a channel 6 feet deep (8 feet at the entrance), 100 feet wide and 4000 feet long, with a 1-acre turning basin at the upstream limit; a 5-acre anchorage near the town pier, 6 feet deep, and modifications to existing state jetties located at the harbor entrance.

August 1979 - Operations and maintenance report recommended that maintenance dredging be continued until such time as an in-depth study could be conducted to determine whether modifications of the Federal project to reduce shoaling was possible.

June 1981 - A Section 107 reconnaissance report recommended that further detailed studies to determine feasibility of Federal participation in navigation improvements was justified.

NON-FEDERAL

1952 - Massachusetts Department of Public Works dredged the entrance channel, and in 1954 dredged the entrance channel and the inner harbor.

1976 - Massachusetts Division of Waterways constructed timber bulkhead on the west side of the narrows.

1980 - A private consultant; Tippets, Abbett, McCarthy, and Stratton published a report on Coastal Zone Management studies relating to shoaling, town pier facilities and pier access.

STUDY PARTICIPANTS AND COORDINATION

Officials of the Town of Marshfield were consulted in defining the problems and needs of the study area and in identifying and obtaining readily available data to be used in this study.

The Marshfield Commercial Fisherman's Association provided data on the fishing industry. The harbormaster was consulted with regard to current problems, needs and opportunities of the study area relative to navigation and harbor usage. The town also provided information on local improvement plans affecting the study area. A record of project correspondence is contained in the appendix of this report.

THE REPORT AND STUDY PROCESS

This DPR summarizes the investigation of alternatives for providing navigation improvements at Green Harbor. Efforts were expended in contacting public officials to provide information and to seek input to the study process. Based on in-house engineering, environmental, and economic input, planning objectives and constraints were developed as alternative plans were formulated. All plans were developed and evaluated in coordination with state and local officials.

PROBLEM IDENTIFICATION

GENERAL

This section presents background information about existing conditions and presents future conditions expected to occur without Federal action. The information was used to aid in identifying problems, needs, and opportunities for the study area. By analyzing existing physical conditions, laws, policies, and economics affecting the area, planning constraints were identified. Specific problem and opportunity statements were generated as the basis for comparative criteria to be used in judging the effectiveness of each alternative plan of improvement.

STUDY AREA AND EXISTING CONDITIONS

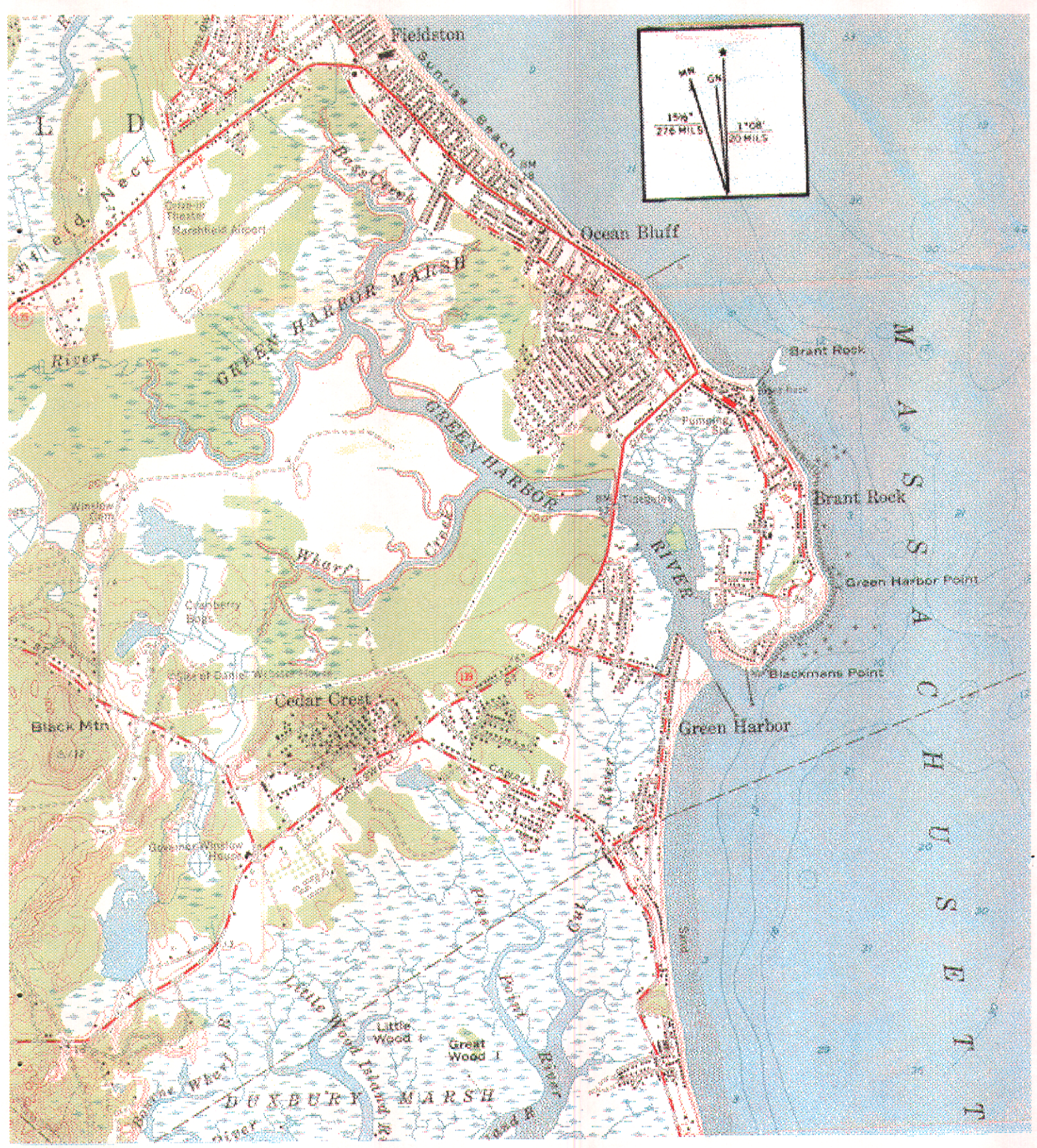
The study area is located on the west side of Massachusetts Bay, approximately 35 miles by highway southeast of Boston. It is located within the town of Marshfield in Plymouth County . It is situated at the mouth of the Green Harbor River, a small stream draining marshlands to the northwest (see Plates 1 and 2). The Green Harbor marshlands were originally fresh water or brackish marshes whose elevations were lowered due to compression of the peat and silt caused by retreating sandbars. This action enabled sea water to enter through breaks in the bars.

The population of Marshfield in 1980 was 20,944, an increase of 137 percent over the 1970 figures. Recreational boating enthusiasts of the metropolitan area of Boston increase the total summer population of Marshfield to approximately 30,000.

Marshfield is the shopping and commercial center for an area devoted primarily to residential uses, recreational boating and other vacation travel activities. Highway access is provided by State Route 3, which is an expressway extending from the Boston perimeter Route I-95 to Cape Cod, and lies about 7 miles to the west of Green Harbor. State Route 139 leads from Route 3 to the harbor.

Green Harbor is located along a 45 mile stretch of coastline between Boston Harbor and the Cape Cod Canal. Other neighboring harbors which have been improved for navigation in this reach by the Federal Government are Cohasset, Scituate, Duxbury, Kingston and Plymouth. The latter three harbors are situated relatively close to each other about six miles south of Green Harbor. Scituate and Cohasset Harbors lie approximately 9 and 14 miles to the north of Green Harbor, respectively.

Located approximately seven miles north of Green Harbor is the new inlet for the North and South Rivers. Located about four miles north of the Cape Cod Canal is Ellisville Harbor in Plymouth. Both of these harbors have been improved by local interests.



SCALE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

LOCATION MAP
PLATE 1

UPPER GREEN HARBOR

LOWER GREEN HARBOR

GREEN HARBOR PHOTOGRAPHS

PLATE 2

There are two beaches near Green Harbor, namely the 2,700 foot long Brant Rock Beach located about 1.5 miles north of the harbor entrance, and the 3,000 foot long Green Harbor Beach which extends south of the harbor entrance.

The entrance to Green Harbor is protected by two stone mound jetties having an arrowhead configuration and with an opening of approximately 250 feet between them at their outer ends. The Federal channel is 100 feet wide and 6 feet deep. It extends from deep water beyond the jetties, continuing between the jetties, and ending 4,000 feet upstream in a turning basin, as shown on Plate 3. The harbor extends about 3/4 of a mile inland from the jetty entrance northwesterly to an earth-concrete dike equipped with tide gates. The dike marks the head of navigation and carries State Route 139 across the harbor. The turning basin is 200 feet by 250 feet, and about 350 feet downstream of the State Route 139 dike. The seaward 600 feet of the 100 foot wide entrance channel (about the location of the jetties) is dredged to a depth of 8 feet. The Federal project includes a 5-acre anchorage, 6 feet deep, near the town pier. This Federal navigation project was completed in 1969.

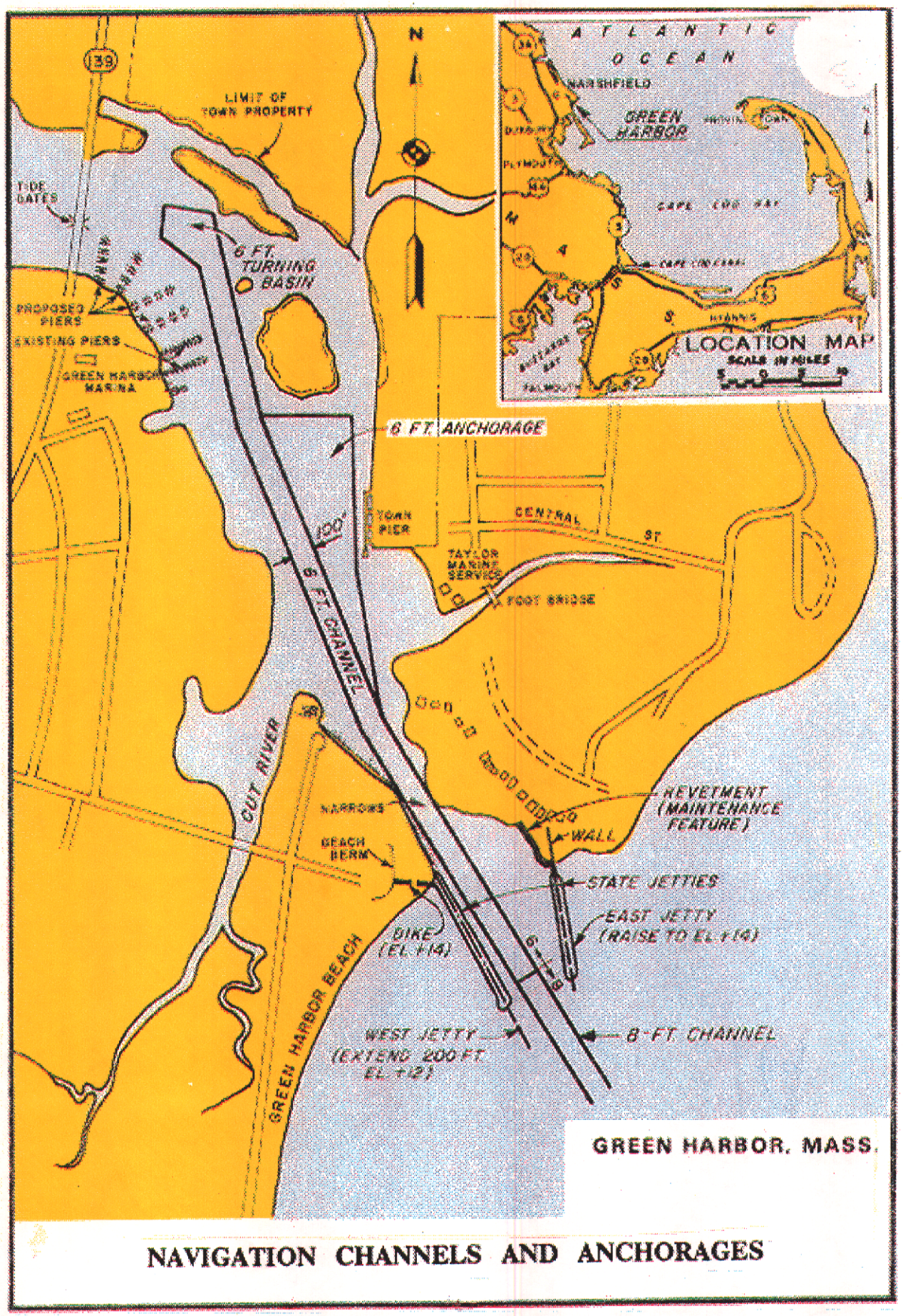
The mean range of tide is about 9 feet, with a spring tide of 10.5 feet. At mean low water, much of the harbor becomes exposed mud flats. The harbor entrance is exposed, to a limited extent, to winds and waves from Cape Cod Bay to the southeast. The predominant wave direction is from the south between May and August, and from the north and northeast from September through April. The northeast waves are generally the larger storm generated waves. The shoreline configuration of the harbor entrance provides moderately well protected waters from these northeast storm waves.

The existing Green Harbor Federal Navigation project has severe shoaling problems and requires annual maintenance dredging. Maintaining the current navigable channel is therefore costly and jetty modifications are being examined by the corps of Engineers Waterways Experiment Station to determine if they can ease the maintenance dredging burden.

CONDITION IF NO FEDERAL ACTION IS TAKEN

Green Harbor is presently being operated at capacity. Due to the physical constraints of the harbor, the limited capacity of the harbor and access to pier facilities for vessels will remain constant. The recreational boating industry in New England is expanding and placing more demand on existing access to pier facilities. Commercial fishing operations at Green Harbor remain economically viable. The size of the existing fishing fleet has not changed significantly in the last 8 years due to the limited capacity and facilities of the harbor.

Locals propose improvement measures involving the rebuilding of the existing town pier structures and the construction of an additional boat launch and harbor master's office. However, these improvements would not significantly alleviate overcrowding of the harbor or improve access to the town pier. Local plans also exist for the construction of a new commercial



NAVIGATION CHANNELS AND ANCHORAGES

PLATE 3

fishing pier in Green Harbor. This new facility is dependent upon Federal funding for the dredging of an access channel and turning basin, and would not be constructed without the Federal Channel. The required channel for this proposed commercial fishing pier was considered under Plan 2.

PROBLEMS, NEEDS, AND OPPORTUNITIES

The existing town pier is presently being used by both commercial fishermen and recreational boaters, causing a congested condition which results in delays to commercial vessels in fueling and unloading catch. There are no cold storage facilities at the town pier, which requires commercial fishermen to make daily trips for bait and ice. Access to cold storage could reduce the number of these trips.

Local interests believe an access channel and turning basin to a locally planned commercial pier would eliminate the overcrowding and conflict between recreational and commercial interest.

Future demand for use of Green Harbor by both commercial and recreational interests will remain strong, but is not likely to increase significantly because of the harbor's limitations in pier access, moorings and dock space. The town is currently handling the overcrowding by careful harbor management, and by holding the number of moorings constant.

PLANNING CONSTRAINTS AND OBJECTIVES

The major constraints existing in Green Harbor are physical, economic, and institutional in nature. Town officials, including the harbormaster, have confirmed that no available additional anchorage exists in the harbor. Further, no excess harbor front property is available for local expansion of commercial slip space.

The first constraint involves the surface area available for anchorage expansion in Green Harbor; it is limited due to the physical characteristics of the harbor, thus restricting the number of additional vessels it could serve. Most of the harbor is already used to accommodate the authorized Federal navigation channel, leaving available for anchorage expansion only those limited water areas adjacent to either side of the existing Federal channel and anchorage basin. Salt marsh islands, identified as environmentally sensitive, are located at the head of navigation in the harbor. Alternatives considered for this portion of the harbor need to be evaluated for potential adverse environmental impacts.

The second constraint is economic in nature, and involves the operating costs that would be incurred by the commercial fishing operators if displacement from the harbor is allowed to occur because of the high demand for anchorage and pier access.

The third planning constraint is institutional, (legal). Any alternatives considered should not unduly encroach upon planned improvements. Evaluation of alternatives would consider local, state and Federal laws affecting the development of the study area.

PROBLEM AND OPPORTUNITY STATEMENTS

Providing additional navigation channels and/or anchorage area at Green Harbor would meet the following planning objectives:

(1) Enhance the viability of existing and future harbor resources and facilities for the benefit of commercial fisheries based at Green Harbor.
(2) Reduce time lost in delays and reduce travel expenses for the commercial fleet due to harbor congestion, which will improve the economic efficiency of the fishermen.
(3) Reduce damages incurred to the commercial fleet due to overcrowded conditions, and therefore reduce operating costs.

PLAN FORMULATION

PLAN FORMULATION RATIONALE

The formulation of plans for navigation improvements at Green Harbor is predicated on a set of criteria adopted to permit the development and selection of a plan responsive to the navigation problems and needs of the study area. Each alternative is considered on the basis of its contribution to the planning objectives. Selection of a specific plan is based on technical, economic and environmental criteria which permit the fair and objective appraisal of the effect and feasibility of alternative solutions.

Corps of Engineers technical criteria require that the optimum plan have the facilities and dimensions necessary to accommodate the expected user vessels, and sufficient areas to provide for maneuvering of boats and development of shore facilities.

Economic criteria require that the annual benefits of the navigation improvements exceed annualized costs (BCR>1.0) and that the project provides for the maximum National Economic Development (NED).

Environmental criteria require that the selected plan incorporate measures, where necessary, to preserve and protect the environmental quality of the project area. This includes the identification of impacts to the natural and social resources of the area and the minimization of those impacts that adversely affect the surrounding environment.

MANAGEMENT MEASURES

A range of management measures can be identified and evaluated as the basis for formulating alternative plans to solve the navigation problems in Green Harbor. These management measures are categorized as either structural or non-structural.

Structural measures are identified as those that involve the construction of features that would to varying degrees meet the study objectives developed for Green Harbor. These alternatives typically would involve the construction of new, or improvements to existing access channels and/or anchorage areas in Green Harbor.

Non-structural measures involve those solutions that would achieve the same objectives, but would do so by means not involving new construction, such as the transfer of vessels to neighboring ports.

ANALYSIS OF ALTERNATIVES CONSIDERED

In the reconnaissance study phase, three alternative plans were identified for evaluation:

(1) Plan 1: As proposed by local interests, this plan requires the dredging of all or part of the salt marsh island adjacent to the location of the proposed commercial fishing facility. This plan, as shown in Plate 4, would provide a turning basin and additional mooring spaces for the commercial fleet. However, because of the potential for adverse environmental impacts associated with disturbing sensitive coastal resources, this plan was eliminated from further consideration during the detailed studies.

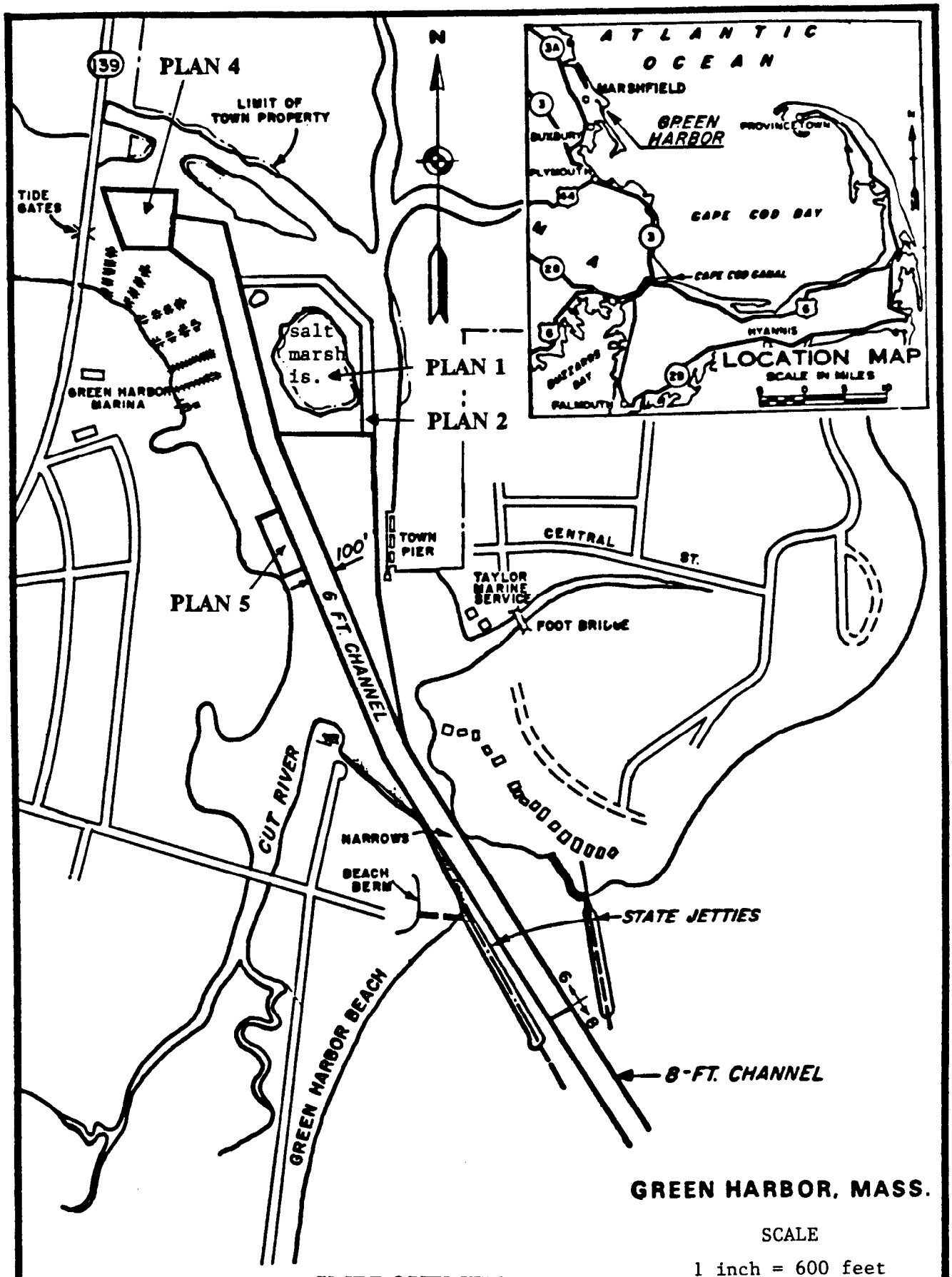
(2) Plan 2: This plan, also shown in Plate 4, requires the dredging of a channel 1,100 feet long by 60 feet wide to a depth of 6 feet mean low water (MLW) around the salt marsh island. This channel would be designated for commercial vessels only. It would provide access to both the proposed commercial fishing facility and the existing turning basin without removing any part of the salt marsh island. This alternative would only affect the area between the salt marsh island and the shoreline marshland. However, the tidal flats immediate to and surrounding the salt marsh island have a high shellfish concentration and are considered environmentally sensitive areas. An environmental survey of the study area determined that dredging a channel adjacent to the salt marsh island would be detrimental to the benthic environment of the salt marsh island. Therefore, this plan was eliminated from further study.

(3) Plan 3: This plan consists of relocating the operations of the commercial fleet to other harbors in the area that may be better suited to the needs of the fishermen. However, removal of all or even part of the commercial fleet to other harbors in the area is not considered an acceptable or reasonable alternative by the town. Further, this alternative would increase the operating expenses for the transferred vessels. In addition, nearby harbors are also experiencing congestion problems and transfer for the Green Harbor fleet would exacerbate their problems. The town plans to improve the facilities at the town pier. These improvements will serve to maintain and support the economic vitality of the Green Harbor commercial fleet. For these reasons, the Transfer Plan was eliminated from further consideration.

Because of the importance of preserving coastal resource areas and the failure of the first 3 plans to meet objectives, two further navigation improvement plans were developed during detailed study to avoid or minimize adverse environmental impacts.

(4) Plan 4: This plan provides additional anchorage for the commercial fleet by expanding the existing turning basin to the east-northeast at the head of the Federal navigation channel. The overcrowding at the existing anchorage area would be partially relieved. Excess commercial boats would use the new anchorage area provided by this plan. Benefits to the commercial fleet arise with the reduction of damages to the vessels moored in the overcrowded anchorage area. However, during our planning efforts, it was discovered that a private property owner, who has deeded rights to the shoreline in that particular area of the harbor, plans to develop the area for recreational purposes. Consequently, commercial navigation improvements at this area are not possible, and Plan 4 was also dropped from further study (see Plate 4).

(5) Plan 5: This plan involves dredging an area one acre in size to 6.0 feet MLW to provide a new anchorage area to accommodate commercial vessels. This alternative represented a viable option relative to local harbor management goals, with minimal physical and environmental concerns. This plan addresses the problems and needs identified. This new anchorage area would be located adjacent to the western limit of the existing Federal Channel. It would accommodate 12 commercial vessels based on a two-point mooring configuration, with 35 feet being used as the average length of a vessel expected to utilize the new anchorage. This plan is selected for the development of project costs and benefits (see Plate 4).



IMPROVEMENT PLANS

PLATE 4

TABLE 1

SUMMARY OF ALTERNATIVES

PLAN	STATUS
PLAN 1: Dredge Salt Marsh Island	Environmentally Unacceptable
PLAN 2: Dredging new Channel	Environmentally Unacceptable
PLAN 3: Relocation of Commercial Fleet	No Local Support
PLAN 4: Expansion of Turning Basin	Area not available
PLAN 5: New One Acre Anchorage	Selected for Detailed Plan

THE DETAILED PLAN (PLAN 5)

PROJECT COSTS

The costs of Plan 5 are based upon estimates of current charges and rates for the volumes and types of material expected to be encountered and assuming ocean disposal of the dredged material at the Foul Area located approximately 34 miles by sea from Green Harbor. Table 1 reflects the costs and annual charges for this plan.

TABLE 2

ESTIMATED COSTS - PLAN 5

CONSTRUCTION COSTS

Dredging, (Ordinary Materials) 16,000 c.y. @$10/c.y.	$160,000
Contingencies (25%)	40,000
TOTAL CONSTRUCTION COST	$200,000
Engineering & Design (15%)	30,000
Supervision & Administration (12%)	24,000
TOTAL PROJECT FIRST COSTS	$254,000

ANNUAL COSTS

Project Amortization (50 years @8 7/8%) ($254,000 x 0.09003)	$ 23,000
Annual Maintenance (3% Shoal Rate) (16,000 c.y. x 0.03 x $12.80/c.y.)	6,000
TOTAL ANNUAL COSTS	$ 29,000

PROJECT BENEFITS

The benefit analysis measures the net beneficial contributions to National Economic Development (NED) associated with the selected plan. Information used in this analysis was provided by the Harbormaster of Green Harbor, the Marshfield Commercial Fishermen's Association and local Marshfield government officials.

The establishment of additional anchorage areas in Green Harbor would benefit commercial fishermen now operating in the harbor, particularly during the April to December period. During this period, the commercial and recreational boats utilizing the harbor facilities are at a maximum. Benefits are derived from time and fuel savings resulting from reduced congestion in the channel and anchorage area, as well as reduced damages to vessels moored in overcrowded anchorage areas.

The time savings benefits mentioned are those offloading delays experienced by the commercial fishermen. Offloading delays can occur for several reasons; tidal delays, overcrowded shore facilities, or vessels moored at the entrance of the channel. The latter cause can be addressed with a new anchorage area as provided with this plan. The new anchorage area would face the entrance channel of moored vessels, allowing the commercial boats to maneuver freely in the offloading area. It is estimated that offloading times can be reduced by approximately 5 minutes for each trip made. This can result in an annual savings of approximately $14,000 (see Table 2). The fuel savings involved with this improvement are minimal and were not included in the benefit analysis.

A further benefit results in the reduction in damages to moored vessels. There are presently five boats moored along the western edge of the Federal channel. Those five, along with seven more from the existing Federal anchorage, would be moved to the new anchorage, so that the new anchorage would accommodate twelve commercial vessels. Congestion would thereby be reduced, and damages due to overcrowding of moored vessels prevented. Of the seven boats being removed from the existing Federal anchorage, four are larger boats, 36 feet and over, and three are smaller boats, 18 to 35 feet. It is estimated that larger boats experience approximately $500 in damages each year, while the smaller boats average about $250 worth of damages. This yields a total annual savings, or benefit for damages prevented of about $2,800 (see Table 2).

TABLE 3
ESTIMATED ANNUAL BENEFITS - PLAN 5

BENEFITS

1. Offloading Delays	
$(125^{1} \times 0.083 \times \$10.00^{2} \times 135^{3})$	$14,000
2. Damages Prevented	
(4 boats x $500) + (3 boats x $250)	2,800
TOTAL ANNUAL BENEFITS	$16,800

1/125 = Average number of fishermen employed from April through December (Marshfield Commercial Fishermen's Association).

2/$10.00 = Average hourly Massachusetts manufacturing wage, Jan. 1988 (Division of Employment Security, Boston, MA).

3/135 = Average number of trips per fisherman, April to December.

TABLE 4
BENEFIT/COST EVALUATION

Total Annual Benefits	$16,800
Total Annual Costs	29,000
Net Benefits	NONE
Benefit/Cost Ratio	0.58

BENEFIT/COST EVALUATION

By comparing the annualized costs and benefits, it can be seen that costs exceed benefits for this plan, and there is no contribution to National Economic Development (NED). Therefore, this plan is not economically justified (see Table 3).

CONCLUSIONS

The five alternative plans described herein have been considered in providing navigation improvements in Green Harbor. Plans 1, 2, and 4 were shown to be environmentally unacceptable, as they seriously impacted upon sensitive coastal resources. Plan 3 was found to be unacceptable to local interests, and would have created problems for other harbors in the area. Plan 5 was found environmentally acceptable, technically feasible, and locally supported, but lacked economic justification to permit Federal participation.

RECOMMENDATIONS

Federal participation in navigation improvements in Green Harbor, Marshfield, Massachusetts is not warranted at this time. It is recommended that Federal involvement in further studies be terminated.

The town of Marshfield is encouraged to continue local harbor improvement plans in the interest of effectively controlling and efficiently managing the harbor congestion problem. Such management measures should contribute to the economic vitality of Green Harbor and enhance commercial fishing operations as well as the recreational interests.

14 Feb 90
Date

Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer

CORRESPONDENCE

Town of Marshfield
Commonwealth of Massachusetts
Police Department

** Harbormaster's Division **

WILLIAM P. SULLIVAN
CHIEF OF POLICE

TELEPHONE
(617) 834-6655

HEADQUARTERS
1639 OCEAN STREET
MARSHFIELD, MASSACHUSETTS 02050

November 17, 1988

Mr. Paul Albrecht
c/o- Unit Army Corps of Engineers
424 Trapilo Rd.
Waltham, MA 02254-9149

Dear Mr. Albrecht:

The Town of Marshfield understands a nonfederal responsibility of local cooperation is necessary for implementation of Federal Navigation improvements under the Corps Continuing Authorities Program.

If the Corps recommends Project implementation, the Town of Marshfield will provide a nonbinding letter of intent in accordance with provision of the draft local cooperation agreement. (LCA, together with a statement regarding the Town's capabilities to finance it's share of the costs.)

Respectfully,

George A. Burgess,
1st Assistant Harbormaster

Approved by:

William P.Sullivan, Chief of Police

gab/dlb

WILLIAM P. SULLIVAN
CHIEF OF POLICE

*** Harbormaster's Division ***

HEADQUARTERS
1639 OCEAN STREET
MARSHFIELD, MASSACHUSETTS 02050

November 17, 1988

Mr. Paul Albrecht
c/o- U.S. Army Corps of Engineers
424 Trapilo Rd.
Waltham, MA 02254-9149

Dear Mr. Albrecht:

The Town of Marshfield welcomes the United States Army Corps of Engineers proposal that would create a new anchorage west of the current Fairway. The Harbormaster's department is in support of this project also, as it will reduce the competition for the limited space and time existing now between the commercial and recreational factions that use our harbor.

The importance of this project to the Town will be evident in the reduction in extra men and time required to direct traffic flow at the launching ramp, and the problem in keeping the floats open for emergencys.

To increase the anchorage would allow our department to re-align some of the currently moored vessels close to the ramp and floats that congest that part of the Harbor which is the most active.

One of the major problems in our Harbor is access by the fisherman to unload there equipment during the Fall Gear Haul-Out. This is the same time of the year that the pleasure boats are being hauled out for the winter. These transporters are using the ramp, boats are tied to the wall and floats, and the fisherman must cycle on station for twenty-five (25) to fourty-five (45) minutes until a space is open. During this time there product is not getting to market. This delay in docking causes everyone to become agressive, which requires our department to leave our usual course of business to handle this situation. The fisherman all leave at approximately the same time and this is what causes the congestion problem.

The Harbormaster's Department will look forward to working with the Corps on this project and will encourage the Board of Selectman, and other Town Boards, to move forware with all speed.

Sincerely,

George A. Burgess,
1st Assistant Harbormaster

Approved by:

William P. Sullivan, Chief of Police

gab/dlb